ISO 29990:2010

NATIONAL INFOCOMM COMPETENCY FRAMEWORK

NUS National University of Singapore

ISS INSTITUTE OF SYSTEMS SCIENCE

FUNDAMENTAL OF PROGRAMMING IN C#

COURSE OVERVIEW

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Objectives

- Learn basic programming concepts using C# (C sharp) language as the medium
- At the end of the course, students will
  - Appreciate the need and importance of programming activities
  - Understand the concept of structured programming and apply them in practice
  - Able to write programs in C#
  - Able to write programs for various business situations
  - Sufficiently prepared for later courses, such as
    - Object Oriented Programming with C#

Prerequisites

- Basic computer knowledge in Windows environment
- Familiarity with command line interface
- Ability to use text editing software
- Good reasoning and logical ability
- Interest, patience and humility
  - You will make lots of mistakes, many of them will be stupid mistakes, and it's part of the learning process

Tentative Schedule

Day	Module
13 Feb	Introduction to Programming Introduction to C# Using Visual Studio Handling Inputs and Outputs
14 Feb	Variables and Data types Expressions and Operators Conditionals Statements
15 Feb	Loops and Iterations String Manipulation
18 Feb	Arrays and Collections Methods
19 Feb	Revision – Q&A Service Obligation Signing
20 Feb	Revision – Q&A Service Obligation Signing

Typical Daily Schedule

- Quiz
  - To practice on how to solve programming problem on paper with minimal trial and error
- Short revision
  - Short discussions on some problems to be discussed together
- Lecture
  - Learn about the concepts
- Workshop and Practice
  - Apply the concepts by solving programming problems related to the lectures given
  - Students with strong programming background may complete all the problems earlier – can help others with weaker programming knowledge
  - Other students should use the time to reinforce the application of the concepts learnt. Ask your instructors and your peers when you are stuck.

Revision Days

- No Extra Lectures
- Some students would need to go for their service obligation signing
- The rest can continue working on programming problems and opportunity to discuss them with your instructor and peers

Grading Matter

- 20-30% of your Term 1 technical subject grade will be from FOPCS
  - Actual allocation will be determined at later date
- In-class exercises are not graded
  - Feel free to make as many mistakes as you want
  - Learn as you make mistakes
- You will write codes on paper in exam
  - Minor syntax errors are OK
  - Logic errors and structural errors will be penalized
    - Logic refers to the approach that you take to solve the problem. If the approach doesn't work, then you can't get the full mark
    - Structure refers to the way to write and organize your code. Structural errors reflect lack of understanding of the proper structure of C# programs

References

- C# Programming Guide
  - https://docs.microsoft.com/en-us/dotnet/csharp/programming-guide/index
- C# Language Reference
  - https://docs.microsoft.com/en-us/dotnet/csharp/language-reference/

- LeetCode
  - https://leetcode.com/
- HackerRank
  - https://www.hackerrank.com